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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,689	07/27/2006	Alfred Freiburger	FREIBERGER - 1 PCT	8394
25889	7590	10/15/2008		
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			EXAMINER MYERS, JESSICA L	
			ART UNIT	PAPER NUMBER
			3746	
			MAIL DATE	DELIVERY MODE
			10/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,689	Applicant(s) FREIBERGER, ALFRED	
	Examiner JESSICA L. MYERS	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/27/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/27/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the evaporator mentioned in line 23 of claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Second Paragraph (112, Second)

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 recites the limitation "the intake prot" in line 19. There is insufficient antecedent basis for this limitation in the claim.
4. Regarding claim 5, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,370,104 to Nelson et al. (Nelson et al.).

In Reference to Claim 1

Nelson et al. teach a hermetically encapsulated refrigerant compressor, comprising a hermetically sealed compressor housing (case (11)), in the interior of which a piston-cylinder unit (including piston (47)) works which compresses a refrigerant and comprises a suction valve with an intake port arranged in a valve plate (the suction

Art Unit: 3746

valve is in valve plate (42)) of the same, with a suction muffler (suction muffler (65)) being provided on the cylinder head (cylinder head (45)) of the piston-cylinder unit, which suction muffler comprises a filling volume (inside of outer wall (71)) and through which the refrigerant flows to the suction valve of the piston-cylinder unit, and with the suction muffler having an inlet cross section (the upper cross section of tubular projection (86) serves as an inlet to the muffler's inner volume) through which refrigerant flows into the suction muffler and with a compensating volume (inside of flaring horn (88)) being provided which is in connection with the suction muffler and the interior of the compressor housing (the top of the horn feeds into the muffler, while its base is in communication with the inside of the compressor housing) and in which the refrigerant oscillates (the refrigerant in the muffler (65) and the horn (88) would oscillate due to any pressure differences between the piston and the line (96)), characterized in that wherein the inlet cross section is simultaneously the connecting port between the compensating volume and the filling volume (the top portion of the horn serves as an inlet to the muffler and as an outlet to the horn) and the compensating volume is formed by an outer tube (the horn (88) is generally tubular in shape) which on the one hand tightly encloses the intake port or the inlet cross section (the top portion of the horn serves as the inlet) and on the other hand encloses the refrigerant suction pipe (the base of the horn encloses the suction pipe (96) in the sense that its outer perimeter surrounds the outer perimeter of the suction pipe (96)) at least along a section and is directed into the compressor housing (the suction pipe extends into the compressor housing), which suction pipe is connected with the evaporator of the refrigerant compressor and extends

Art Unit: 3746

into the interior of the compressor housing (the suction pipe leads from an outside evaporator into the casing (11)) .

In Reference to Claim 4

Nelson et al. teach a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), wherein the compensating volume is 0.5 to 1.2 times the working volume of the piston of the piston-cylinder unit (Nelson teaches that the muffler assembly can be used with any variety of compressors of different size, and that the volume of the piston stroke can be varied by lengthening the piston's bore (see columns 5-6 lines 33-8). Because the volume enclosed by the horn (88) would not change as the piston volume is changed, any variety of ratios between the volume of the piston cylinder and the compensating volume of the horn can be used, including the ratios between .5 and 1.2).

In Reference to Claim 5

Nelson et al. teach a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), wherein the compensating volume is at least half, preferably 0.5 to 3 times the working volume of the piston of the piston-cylinder unit (Nelson teaches that the muffler assembly can be used with any variety of compressors of different size, and that the volume of the piston stroke can be varied by lengthening the piston's bore (see columns 5-6 lines 33-8). Because the volume enclosed by the horn (88) would not change as the piston volume is changed, any variety of ratios between the volume of the piston cylinder and the compensating volume of the horn can be used, including the ratios between .5 and 3).

Art Unit: 3746

In Reference to Claim 7

Nelson et al. teach a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), but do not teach that the cross-sectional surface area of the compensating volume is at most 1.5 times the piston head surface area of the piston of the piston-cylinder unit (as can be seen in figure 3, the cross sectional area of the horn (88) at its widest is approximately the same size or smaller than the piston head surface).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,052,247 to Lee (Lee).

In Reference to Claim 1

Lee teaches a hermetically encapsulated refrigerant compressor (see figures 1 and 2), comprising a hermetically sealed compressor housing (casing (500)), in the interior of which a piston-cylinder unit works (compressing unit (300)) which compresses a refrigerant and comprises a suction valve (valve unit (33)) with an intake port (intake chamber (32b)) arranged in a valve plate of the same, with a suction muffler (refrigerant

Art Unit: 3746

channel (41)) being provided on the cylinder head (43) of the piston-cylinder unit, which suction muffler comprises a filling volume (the volume inside of the channel (41)) and through which the refrigerant flows to the suction valve of the piston-cylinder unit, and with the suction muffler having an inlet cross section (channel inlet (41b)) through which refrigerant flows into the suction muffler and with a compensating volume (inside of outer casing (42), but outside of the channel (41)) being provided which is in connection with the suction muffler and the interior of the compressor housing (the compensating volume feeds into the channel, and the casing (42) communicates with the inside the compressor housing (500) through hole (48)) and in which the refrigerant oscillates (the refrigerant in the channel (41) and the casing (42) would oscillate due to any pressure differences between the piston and the suction pipe (600)), characterized in that wherein the inlet cross section is simultaneously the connecting port between the compensating volume and the filling volume (the channel inlet (41b) serves to connect the channel and the casing volume (42)) and the compensating volume is formed by an outer tube (casing (42)) which on the one hand tightly encloses the intake port or the inlet cross section (the lower portion of the casing encloses the intake port (41b)) and on the other hand encloses the refrigerant suction pipe (the upper portion of the casing (42) contains a guide pipe (46) which is connected to the suction pipe (600)) at least along a section and is directed into the compressor housing (the suction pipe extends from the casing (42) into the compressor case (500)), which suction pipe is connected with the evaporator of the refrigerant compressor and extends into the interior of the

Art Unit: 3746

compressor housing (the suction pipe leads from an outside evaporator into the casing (500)).

In Reference to Claim 2

Lee teaches a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), wherein the suction pipe is guided shortly to a point shortly before the intake port in the outer tube (the suction pipe (600) is guided into the guide pipe (46) in the outer tube (42), which is located short radial distance away from the muffler inlet (41b)).

In Reference to Claim 3

Lee teaches a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), wherein the outer tube and the suction muffler are provided with an integral configuration (the outer tube (42) and the channel (41) are made as a single component).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al.

Art Unit: 3746

In Reference to Claim 6

Nelson et al. teach a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), but does not teach that the smallest flow cross section in the compensating volume has a cross-sectional surface area which corresponds to 1/4 to 3/4 of the cross-sectional surface area of the intake port (24).

However, as can be seen in figure 3, the top portion of the horn (88), which is the portion of the compensating volume with the smallest cross section, has a cross sectional area that is approximately $\frac{3}{4}$ the size of the intake port. It would have been an obvious matter of design choice to change the size of the muffler's intake port in order to optimize the thermal and muffling characteristics of the muffler assembly, and since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Lee teaches a hermetically encapsulated refrigerant compressor according to claim 1 (see the rejection of claim 1 above), wherein the compensating volume has a circular cross section (see figure 3, where the portion of the casing (42) surrounding the compensating volume is cylindrical in shape) but do not teach that the ratio of the length of the compensating volume to its diameter is higher than 10.

However, the cylindrical compensating chamber of Lee is generally long and slender in shape, and therefore would have a relatively high ratio of length to diameter.

Art Unit: 3746

It would have been an obvious matter of design choice to vary the diameter and length of the compensating chamber in order to optimize its muffling characteristics of, and since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,763,909 to Svendsen and U.S. Patent Application Publication 2005/0002798 to Bjerre et al. both teach similar muffling devices.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA L. MYERS whose telephone number is (571)270-5059. The examiner can normally be reached on Monday through Friday, 8:30am to 5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3746

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/JLM